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INFORMATION FOR HORSE BREEDERS

By

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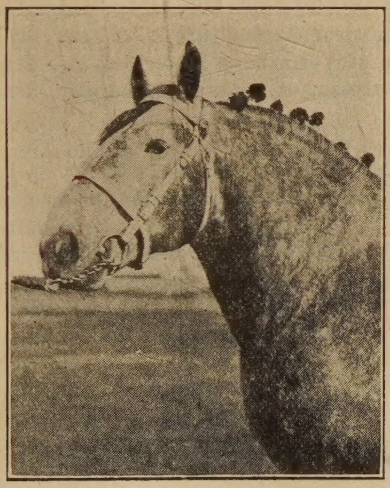
For

Oklahoma State Live Stock Registry Board



Percheron Stallion, owned by
Oklahoma A. & M. College

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The Office of the Board is located on the first floor, Morrill Hall, Oklahoma A. & M. College. Address all correspondence to Oklahoma Live Stock Registry Board, Stillwater, Oklahoma.

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Timely Information for Horse Breeders

In publishing this brief bulletin, it is hoped to make available in concise form some information that should be in the hands of every person engaged in horse raising, whether on a large or small scale. Oklahoma is as well suited to horse raising as any other state in the west or south, and the breeding of all classes of farm animals should engage the attention of the farmers of this state to a much greater extent than at present. The demand is not only for more stock, but for a better grade of live stock.

It is the business of the Live Stock Registry Board to promote the horse breeding industry by every possible means, and it is with the hope that some of the information contained in this bulletin may be of benefit to many breeders who may lack extensive experience in the breeding business.

One great benefit of the stallion registration law is that purchasers of stallions are learning that there is a considerable number of registry associations that are not standard, and that horses registered with these associations cannot be licensed by the Stallion Registration Board as a pure bred, neither can the get of such a stallion be registered in a recognized registry for that breed. It is an important matter to a large number of farmers in a community as to whether a stallion at public service is the kind of a horse he is represented to be and it is a matter of equal importance to the purchaser of the horse. Purchasers should know positively that the association in which an intended purchase is registered is a recognized association for that breed.

The business of horse breeding has been developed very largely along the lines of least resistance. In the past almost any kind of a stallion would be acceptable to the stockmen of most communities because they were equally careless as to the kind of mares bred or the class of horses produced. Usually very little thought was given as to why one horse was worth forty, fifty, or a hundred dollars more than another. The improvement of the grade of horses in any large section of the country has been as a rule very slow, mainly because of the indifference as to the kind of stallion used. No principle is more fully established in stock breeding than the one that like begets like, or the likeness of a near ancestor. The first efforts along the line of stock improvement generally result in a demand for better sires. The result of such an effort is that within a few years there is a much better class of mares to be bred. Not every pure bred is suitable for improving the class of live stock. Some individuals will show lack of quality, poor conformation and physical defects that are more likely to appear in their progeny than if they were scrubs instead of pure bred animals. Some defects are

considered to be hereditary and a stallion having such defects should not be used for breeding purposes.

There is a great deal of discussion as to what should constitute unsoundness in a stallion. It is evident that if any defect that a horse may have is likely to appear in a considerable proportion of his get, then a horse having such a defect should not be permitted to be used as a breeding animal. Practically every stockman will agree that a stallion should not be allowed to stand at public service if certain serious defects are likely to appear in his progeny. Such defects as side bone, when associated with poorly shaped feet, ring bone and spavin are generally considered serious enough to prevent a horse from getting a certificate of soundness unless such defects can be traced directly to external injury. Such faulty conformation of the hock as will lead to bone spavin, thorough pin and curb generally bars a horse from a certificate of soundness. Such defects as roaring, moon blindness, (periodic opthalmia) and cryptorchidism (one or both testicles retained in the abdomen) are serious defects and should not be present in a stallion.

Artificial Insemination.—The method of breeding by using an instrument or large gelatin capsule to transfer the semen of the stallion to the mare is a practice that is becoming more and more common in horse breeding. There is nothing difficult about the process of transferring the semen by such artificial means and any one who is accustomed to handling breeding stock can familiarize themselves in a short time with the work. Cleanliness, some means of keeping the seminal fluid at body temperature and careful handling of the semen is what is necessary. There are several kinds of instruments to be had for this purpose, but practically any of them will give good results in the hands of a careful operator.

A few years ago there was much objection on the part of those engaged in horse raising to the practice of artificial insemination. It was commonly believed that colts from mares impregnated through the agency of capsule or syringe might be defective, might have less stamina or might inherit less of the desirable qualities of the male, etc. Many objections had to be met and many questions answered. The use of artificial means in transferring semen to the mare has been practiced successfully by some breeders for several years. This has been practiced by so many breeders that it is a safe statement to say that it is no longer an experiment but a successful way of increasing the service of a good horse and that the method should be used by every stallion owner instead of crowding the horse with two or more services daily.

There are several advantages to be secured by using instruments to transfer semen from an animal bred by natural service to another that has not been so bred. In the first place, it should reduce the number of services to never more than one daily and better

still, if not more than three or four a week. Daily or twice daily service reduces immenssely both the number and vitality of the sperm cell. In 1911 the Oklahoma Experiment Station issued a bulletin on artificial insemination and the following table which shows the effect of daily service on the number and vitality of the sperm cell is taken from the bulletin: This table shows the effect of daily service for nine consecutive days:

No. of Service.	Time Semen Lived 32-38 Degrees C.	Number of Sperm Cells.
1st service ..	5 per cent alive after 9.5 hrs.	131,750
2nd service ..	No sample obtained	
3rd service ..	Cells all dead at 6 hrs.	100,625
4th service ..	10 per cent alive after 5.5 hrs. ...	78,000
5th service ..	Cells dead after 6.5 hrs.	97,875
6th service ..	Cells dead after 4 hrs.	54,280
7th service ..	Cells dead after 3 hrs.	53,780
8th service ..	Cells dead after 3 hrs.	51,480
9th service ..	.....	5,840

The number of cells given above is for approximately one fiftieth of a drop of semen.

Some stallion owners prefer to transfer the semen with capsules. They take the capsule partially filled with semen between the thumb and fingers and introduce the material directly into the womb by pressure with the fingers. Other operators use a syringe and with the finger guiding the point of the syringe inject the seminal fluid directly into the uterus. Only a small quantity of semen is necessary, as there should be thousands of sperm cells in every drop of the fluid. Only one sperm cell can be used to fertilize the ovum or egg cell of the female. Usually a good syringe is all that is necessary to secure the semen from the mare after she has been bred. Some semen may be collected as the stallion dismounts. Use a clean enameled pan or cup for this purpose. The use of the breeding bag is not practiced to a great extent because many stallions will not serve freely if the bag is used and with the improvement of the syringe the bag is unnecessary.

By whatever means used to secure the semen, it should be placed in clean warm vessels and kept at the body temperature until used. There is no exact data as to how long the seminal fluid will retain its power of fertilizing the egg cell. The sperm cells will have the power of movement for several hours after it is collected, but they undoubtedly lose their power of fertilizing some time before they lose their vitality. On account of the loss of fertilizing power the best results will be secured when the semen is used soon after it is collected.

The operator should take care to make thorough examinations of all mares before attempting to breed them with the impregnator. If the animal appears to be normal in every way the use of a speculum is not necessary, but if abnormal conditions are met with it is

convenient to use a speculum in order to make a closer examination. If there is inflammation present, or if the vaginal secretions are too abundant, sticky and white in color the chance of successfully breeding that animal is small. Such cases should have some medical treatment before an attempt is made to breed. When such unusual cases are handled, the operator should carefully cleanse the hand and arm as well as all instruments used before making any other examinations. The normal color of the mucous membrane of the vagina is a pinkish-red. The secretions are not abundant and are slightly alkaline in character. If the secretions of the vagina and uterus are acid in character breeding becomes difficult or even impossible until this condition is remedied. A small piece of blue litmus paper may be inserted into the organs and if the color of the moistened paper changes to red, it shows an acid condition of the secretions.

There are a few diseases of the reproductive organs of the mare with which the stallion owner should be familiar, both as to the symptoms and treatment. Mares having disorders of such character are difficult to breed, and these troubles in some cases may be transmitted to other mares through the agency of the stallion.

Leucorrhea.—This is a catarrhal inflammation of the lining membrane of the vagina or uterus or both. This trouble is not uncommon in pregnant mares and often persists after foaling. The symptoms are a discharge from the vulva of a thick white fluid having an offensive odor. The disease often affects the general condition of the animal, causing loss of flesh, the hair becoming rough and dry and the animal showing a general unthrifty condition. Such a case should receive treatment before being bred. The following general treatment will be of benefit in most cases: Wash out the uterus and vagina with a half per cent solution of carbolic acid or kreso, warming the solution to about body temperature. Use this wash daily for several days. At the end of about a week, add a second wash after the first, using a weak astringent solution such as solution of golden seal, tannic acid or alum. All discharge should cease before an attempt is made to breed.

Vaginitis.—This is an inflammation of the lining membrane of the vagina alone and is generally caused by some injury to the parts during foaling or may be due to an extension of inflammation from the uterus. In these cases, the membrane may vary in color from a dark red to a dark lead color, depending on the severity of the trouble. Such cases should not be bred. Treat by thoroughly washing the vagina with weak antiseptic and astringent solutions as in Leucorrhea.

General Care.—The male colt that is to be saved for breeding purposes should conform to all that has been said concerning soundness and good conformation. The run of a pasture is necessary if the colt is to develop properly. Do not keep them closely confined.

The feet and teeth should receive special attention. Defective teeth and poorly shaped feet may be the cause of a great deal of trouble later on, especially as the stallion is kept for a part of the year at least in such high condition. Feed liberally, but do not fatten the animal. Feeds that are rich in flesh forming material are necessary, such as oats, bran and alfalfa or clover hay. Feed but little corn or kafir. Keep the colt developing and vigorous. As long as the skin is soft and pliable and the coat glossy the animal is thriving.

Horses attain the age of puberty or sexual development at 12 to 13 months, but are not physically mature until the age of five or six years. This must be considered when standing a young animal, remembering that the breeding of young and immature animals is directly responsible for many poorly developed, cheap horses.

No special ration is necessary for a breeding animal. Feed them what they relish and thrive on. Do not change feed suddenly. Grain is the feed on which to fill and develop an animal and not hay. No stallion or jack should be allowed to serve within two hours after feeding or half an hour after watering. It is not necessary to give special feeds or amounts, but hold the usual feed and quantity. Plenty of exercise is absolutely necessary. Do not consider keeping stallions or jacks unless you have good paddocks that will allow plenty of room for free exercise. Keep the feet clean, closely pared and unshod if possible. During the breeding season, steel plates may be used because the hoof appears to be more brittle at this season than at any other period of the year.

The importance of proper management and care of breeding animals cannot be over estimated. Sexual desire is natural to mature healthy animals and if a male refuses to serve, it is likely to be due to some fault of management or care and not to any peculiarity that the animal is supposed to have. Improper nutrition, sexual exhaustion, rough handling, etc., will explain many of the peculiar cases where the horse serves with difficulty, or may refuse to serve at all. Sluggishness, when not due to disease, is generally due to high condition. Williams records a sluggish animal that was treated as follows: The ration was reduced one third and an eight mile walk given daily. At the end of the two weeks the animal had regained normal condition. The use of drugs, while popular, is not practical since there is a limit to the ability of every animal and some are constitutionally stronger than others. Iron, phosphorous, arsenic, yohimbin (vetol)' capsicum, cantharides, etc., will stimulate sexual desire, but such stimulation is temporary and does not aid the animal in any way, in fact, most of these drugs work a direct injury.

The mare, while sexually mature at one to one and a half years of age, should be allowed to mature physically and should not be bred earlier than two and one-half years to three and one-half years of age. Sexual maturity in the mare is accompanied by certain

changes in the reproductive organs, which is evidenced by the appearance of periods known as oestrum or "heat." During this time the ovum or egg escapes from the ovary and passes down into the uterus. At this time only can the female become pregnant and ultimately bear young. If at this time the animal is bred, the sperm cell unites with the egg or ovum and pregnancy results. Usually the animal does not come in heat during the period of carrying the foal. After foaling the mare will usually come "in heat" again at from seven to ten days and at somewhat irregular intervals, usually twenty-one days, until the mare is again bred. This series of periods of oestrum or "heat" is known as the sexual cycle. For the horse and ass it is as follows: Beginning in February or March and lasting from a few hours at a time to three or four days, they recur at twenty-one day intervals until June or July. From then on these periods are very irregular until the next spring; each succeeding interval between periods of heat lasting longer than the previous one. Even though the period of heat may be of two or three days duration, breeding at any time during this period will not always result in pregnancy. The favorable time may not last more than a few hours.

The Mare in Foal—The duration of pregnancy in the mare is approximately eleven months, 330 to 340 days. Some breeders regard any birth after 300 days as normal. As a rule, male colts are carried longer than females, but this is subject to variation. Count Lehndorf in a record of 3,800 foals, found the average to be eleven months and three days. Young mares are likely to carry the foal a shorter period, advancing the time as they become older. With the advent of pregnancy mares become tractable and gain in flesh.

There are three methods of diagnosing pregnancy. (1) Rectal examination. By this method the enlarged uterus is felt and fetal movements noted. (2) Pressure in the flank and watching for movements. (3) Listening for the fetal heart beat after the sixth or seventh month. If the heart beat is heard, it will be a high pitched sound and the rate will be much faster than that of the dam. If conception follows breeding, the neck of the womb soon seals and if this is opened abortion will result.

It is a mistake to allow mares in foal to become too fleshy. The mare should be worked steadily (not over exerted) until very near foaling time and the foal will be healthier and stronger as a result. Regardless of the state of nutrition of the mother, the food supply to the developing embryo will be uniform. The food is carried to the reproductive organs by the blood. Exercise strengthens the heart and circulation and increases the blood flow to the developing foal. Two weeks before foaling the grain ration should be partially

replaced by bran to keep the bowels in good condition. If the season permits green pasture is ideal, housing the mare only for protection from storms.

At foaling time an attendant should be present to render assistance if necessary. Soap, a gallon of raw linseed oil, warm water, antiseptics, towels and a blanket are the materials needed. The normal position of the colt in delivery is considered to be, head and fore feet together extended with belly on the floor of the pelvis, hind legs extended. The fetal membranes or "after birth" should all be cast off at the time the foal is delivered. If they do not come away naturally and gentle traction does not dislodge them, they must be forcibly removed after ten or twelve hours. Sometimes the life of the colt may be saved by a little attention after it is delivered. The membranes should be removed from the head immediately so that the breathing is not interfered with. Rubbing the body vigorously with rough towels and working the limbs or pressing the chest walls will assist materially in stimulating respiration.

Care of the Foal.—If the foal is unable to stand and nurse within four to five hours, draw some milk in a clean bottle and feed or else hold it in position beside the mother. If there is no free bowel movement within a few hours, syringe the rectum out with warm water and soap suds or else use oil. This treatment will help in the passage of the first feces that have accumulated in the bowel during development. It is very important that the colt's bowels should be normal and if they are not do not delay in giving the injection, also a tablespoonful of castor oil. If the mare is weak or sick at foaling time or the udder caked, feed the colt with fresh cow's milk diluted with boiled water, one part to three parts of milk. To this add one ounce of lime water and two teaspoonsful of sugar to the pint. Feed a pint of the milk every three hours for three or four days or until the mare has become normal. If the colt must be raised by hand, give larger quantities of milk after about four days. If diarrhoea is noticed, give the following treatment: Prepared chalk one dram, oil of eucalyptus 10 drops, salol 10 grains. Give one dose in a little water or milk three times daily until the bowels become normal.

Navel ill is directly responsible for a great deal of loss among young colts. It is an infectious disease caused by bacteria entering the open navel at, or soon after birth. The bacterial infection results in what is commonly called blood poisoning, which manifests itself by such symptoms as chills, fever, trembling, rough staring coat, loss of appetite, dullness, rapid pulse and breathing, some swelling at the navel and often a discharge from this region. Very often the disease is so acute that the colt may die in two to four days. If the infection through the open navel does not kill the colt in a couple of days, then such symptoms as swollen joints, stiffness, etc., may be seen. Usually the knees, hocks and stifle joints are the ones

affected. They become hot, painful and much enlarged. Abscesses may develop in those or other joints. If abscesses do form, they should be lanced and syringed out with a warm 2 per cent solution of carbolic acid or kreso. In addition to local treatment of the joints, the colt should receive treatment to regulate the bowels. Good feed and stimulants to keep up the strength. If the mare has been provided with a clean place for foaling, there is not much need for attention to the navel in most cases.

However, a good rule to follow is to tie the cord with a stout string soaked in an antiseptic. Remove the remainder of the cord and paint the stump and region about the navel with iodine. Sometimes the urine will be seen to drop from the navel for a day or so. This is indicated by the navel being wet and the cord not dry as it should. The simple treatment that the stockman may use is to keep the skin and region about the navel clean and paint the region with iodine. A vaccine is manufactured for navel ill which may be used with benefit where infection is noted and the joints begin swelling. Healing may take place and the navel close, but often a rupture appears later because of weakness of the tissues in that region.

The majority of horses have distemper while young, which is probably best as it is milder as a rule in young horses. The symptoms commonly consist of a flaky white discharge from the nostrils, swelling and tenderness between the lower jaws, fever, dullness and a moist cough. Protect such cases from stormy weather, by keeping them in open sheds or well ventilated stalls. Allow plenty of water and regulate the bowels with laxatives. Unless breathing is difficult it is not necessary to lance the abscesses as they will break readily and usually heal faster than if lanced. Hasten puss formation with hot stimulating liniments and hot fomentations and use antiseptic solutions to cleanse the region. If necessary, the animal may be made to inhale tar vapor. Tie the animal close to the manger, place a hot brick or stone in a bucket and pour over it a couple of ounces of tar. The vapor is given off rapidly and the animal may inhale this without danger. Repeat the treatment not oftener than twice a day for a few minutes at a time.

Aside from the general management of the stallion, there are a couple of diseases that should be considered in connection with breeding work. They are orchitis, or inflammation of the testacles, and impotency:

Orchitis.—Orchitis is an inflammation of the testicles and is often seen in the stallion due to bruises or injuries of various kinds and in some cases the trouble may appear without an assignable cause. One or both testicles may become swollen, very tender and painful, and if the trouble continues for any length of time, the glands become firmer than normal and may be rough or knotted instead of smooth. The horse should be taken from the breeding barn

at the first indication of this trouble. Usually orchitis yields to treatment if begun promptly. The treatment should be begun by giving the animal a pound of salts in a quart of warm water and cutting down the grain feed very materially. Apply locally a strong preparation of poke root, which may be purchased of the druggist or prepared at home by taking fresh poke root, cutting it into thin slices and boiling until you have a strong ooze. Bathe the parts with this two or three times a day. Belladona ointment may be applied once daily or the testicles may be painted with a solution of guiacol in severe cases. In every case of inflammation of the testicles of the stallion or jack a truss or suspensory should be used. If none are on hand, one may be made by using a strong piece of cloth having two strips coming up from behind on either side of the tail and two in front, tying them diagonally across the hips. This will prevent the weight of the testicles from bearing on the cord, and will make the animal much easier. If the inflammation is severe and continues for some time, it is likely to destroy the value of the animal for breeding purposes. In any case of orchitis the horse should be removed from the stud and it is doubtful if he should be used for breeding purposes again during that season.

Impotency.—Impotency means the inability of the stallion to fertilize the mare bred. The reason being the semen does not contain active living sperm cells. There may be several causes for this form of impotency; the most common being degeneration of the organs on account of orchitis, tumors, cryptorchidism, etc. A great deal of information regarding the breeding qualities of a horse may be obtained by making a microscopic examination of the semen. This fluid from a vigorous stallion will show a great abundance of very active cells that will retain their vitality for several hours at from 12 to 18 degrees below the temperature of the body. In comparison with the above, the seminal fluid from a poor breeder will contain a much less number of cells, their activity will be less and there will also be quite a large per cent of dead or inactive cells. In the semen from a good breeder there will scarcely be an inactive cell.

It is evident that if organic disease involves the testicles, treatment will be out of the question. If, however, the trouble is found to be due to inflammation of the sheath, then cleanliness and the use of weak antiseptics will remedy the trouble. Many of the cases of impotency and shy breeders are due to allowing young horses to serve too freely during their first season. Impotency due to general body weakness may be remedied entirely or partially by building up the general health of the animal and stopping breeding for a season.